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**EL7001-8**

**Dr. Glen Gatin**

**Principles and Practices of E-Learning**

**Assignment 4: Digital Divide**

**Comments: None and this time.**

**Faculty Use Only**

Good analysis of this, Michael. Good use of current resources. Your writing is becoming more parsimonious, keep working at it.

Once again, the mark of Western scholarship is the use of theoretical frameworks to understand issues and topics and continually test those theories with systematic empirical approaches. As you are preparing to participate in this system, you must always look for the theory, look for the research **about the theory** and look for the gaps in the research.

Gatin July 12, 2013

## Overcoming the Digital Divide

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## Overcoming the Digital Divide

Since 1951 technology has slowly been making its way into education reform. By 1986 25% of high schools were using PCs for college and career guidance. Since 1997 the growth and impact of the Internet and technology has changed the way people live their lives and today technology is slowly transforming education. Since the early part of the twenty-first century researchers have examined the advances in educational technology and how it has given some

students an educational advantage over others because of their access to online resources and information. The purpose of this paper is to identify five potential issues contributing to what is referred to as the digital divide, how these issues impact e-learning, and strategies to overcome each issue.

### Perceptions

The digital divide refers to the existing gap between those who can use new digital technologies and those who can't. This is a key issue of today's society, since it also indicates a distinction between those who can access certain information and those who are unable to do so. Therefore, before identifying potential obstacles contributing to the digital divide this paper first strives to understand the perceptions that scholars argue lead to the divide. A recent article published in 2011, by Epstein, Nisbet, and Gillespie, discuss two interpretations of the divide, which has been the topic of conversation for many scholars, technology accessibility and technology literacy. They also add that many scholars believe that the digital divide should be understood as a series of divides, a continuum, or even a spectrum of divides (p. 95).

The first interpretation of the digital divide is the notion that there is a limited accessibility of technology (Epstein et. al, 2011). It is the gap separating those who have computers and Internet access from those who don't. Over the last decade computer technology has become cheaper to buy and easier to access. Many argue that not having access to technology is no longer part of the digital divide because of the increased access to computers and the Internet (van Deursen & van Dijk, 2011).

While the gap in accessing technology is becoming smaller due to the affordability of information and communication technology (ICT), scholars argue there is still a digital divide that exists. According to van Deursen and van Dijk "Changes in society demand new skills,

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**Comment [1]:** More importantly for doctoral scholars, what theoretical frameworks do scholars use to try to explain and predict behavior in this regard?

How are these theoretical frameworks being tested with empirical research?

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**Comment [2]:** (2011)

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**Comment [3]:** ..have

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**Comment [4]:** ..scholars—technology...

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**Comment [5]:** Use the active voice

..that access to technology is limited.

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**Comment [6]:** Avoid expletive constructions.

..a digital divide still exists.

especially those related to the Internet as one of the most important means of communication in contemporary society” (2011, p. 894). Considering this statement the second interpretation of the digital divide expands to include a lack of technology literacy and use. This is especially important for learners in higher education institutions because of the increased expectation of technology use in colleges around the world.

### The Divides

Access to the Internet either at home, at school, or in public areas is becoming a universal expectation most of society now takes for granted. Many areas around the world still do not have technology accessibility and if fortunate enough to have access to computers and the Internet that accessibility does not mean that these individuals will know how or want to benefit from that access. Many articles identify a number of technological related divides and benefits gained from the use of technology. In this paper there are five contributing factors to the digital divide that are discussed; access to the Internet, technical and literacy knowledge, learner motivation, and administrative issues. Although these five factors do not comprise all of the obstacles that encompass the digital divide, different articles referenced in this paper indicated that these are currently the most important.

### Access

According to Waycott, Bennett, Kennedy, Dalgarno, & Gray (2010) the number one constraint that students identified as a contributing factor to the digital divide was a lack of “access to technology” (p. 1207). In many areas of the world there is still minimal access to the Internet and appropriate technology. In contrast, research conducted by Rye (2008) stated that ownership of computer technology is close to 100% in many countries and that it has “become evident that the presence of computers is not automatically followed by use” (p. 173). This

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**Comment [7]:** Use and when listing authors in the text, use the ampersand in parenthetical materials and in the reference list.

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**Comment [8]:** People in many parts of the world have limited access to the internet and appropriate technology. (Citation, xxxx)

indicates a discrepancy in the research and a divide in scholarly opinion about the availability of technology resources among people around the world. However, what seems to be consistent among the literature is the fact that educational institutions, in poorer countries especially, lack affordable computers, reliable Internet connections, and access to online scholarly material.

To overcome these factors, and address the poor accessibility with information and communication technology (ICT), several scholars advise that government policy begin to focus on providing access to the less advantaged (Rye, 2008; Taipale, 2013; Whalen, 2008). The articles also suggested that educational institutions are more likely to be able to provide computer and information literacy training to the disadvantaged so policies that encourage ongoing facilitation of technological resources in these institutions should be encouraged. Whalen (2008) encourages government entities to partner with business entities to provide “free or low-cost access to the Internet and computing equipment” (p. 62).

### Technical & Literacy Knowledge

Another significant factor in the digital divide is the lack of skills necessary to access the Internet and use computer related technologies. In Indonesia Rye (2008) found that urban groups of people had a positive attitude about engaging in e-learning because all of the “students were already familiar with the use of new technology, even though none of them had used it for educational purposes before” (p. 179), while those in the remote district, even when they could get access “most of them faced a new problem, namely lack of necessary skills” (p. 177).

According to van Deursen and van Dijk “Using the internet constitutes action, interactions, and transaction” (p. 895) and they divide, using the Internet effectively, into four technical skills (2011). Twenty-first century technology skills are the foundation to future educational achievement, economic development, and workforce readiness. “More than 80

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**Comment [9]:** By definition, if they are scholars, they are using a theoretical framework. Sometimes these theories are implicit and critical analysis is required.

What theories are represented in these articles?

What research has been conducted to test these theories?

percent of Fortune 500 companies post their job openings online only and require online applications. Fifty percent of today's jobs require some technology skills and this percentage is expected to grow to 77 percent in the next decade" (Visser, 2013, p. 105). Those who do not acquire these skills will find it extremely difficult to obtain future jobs.

A third factor in the digital divide is the lack of skill in writing, reading, communicating, keyboarding, language, or any combination thereof. The lack of these literacy skills has a major impact on learning and can be a huge obstacle to learners in an online environment (Genlott & Grönlund, 2013). In a small study they conducted it was suggested, that "More people in the world need enhanced literacy skills to be able to find, select, interpret, analyze, and produce information" (introduction para. 1). Much of e-learning requires the ability to use these skills effectively. The article referenced Findahl's 2010 study, which found, in 2009, the beginning age for Internet users in Sweden to be four years of age. According to the Findahl study, similar statistics can be found in 21 other countries suggesting a need to address technical and computer literacy early.

Whalen (2008) suggests institutions overcome these factors, in e-learning, by providing students a framework for technological resources that are easy to use and interactive. Institutions providing this support minimizes the learning curve students in e-learning often experience. He also indicated that curriculum designers and teachers should be trained sufficiently to create and present educational material that is engaging, interactive, and motivating. Moreover, research findings on disadvantaged youth indicated that they were far more likely to constructively use technology if provided with early intervention and correct habits, both at school and home (Rye 2008; van Deursen, 2011; Whelan, 2008).

## Motivation

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**Comment [11]:** Avoid colloquial terms or jargon in academic writing.

Education is the most important single predictor for the use of technology; “adoption rates become higher and attitudes more positive with increased levels of education” (van Deursen & van Dijk, 2011, p. 897). An additional factor in the digital divide is the lack of motivation to use technology for purposes other than social media and communications. In an observation made by Rye (2008) “Much of the land in Jakarta [Indonesia] is occupied by low-income groups, the majority of whom have never used a computer” (p. 180). Two other articles support this observation stating advantaged and disadvantaged groups are growing rather than shrinking (van Deursen, 2011; Whelan, 2008).

Studies show that information and communications technology (ICT) raises the overall standard of living in countries where its use is an embedded part of life (Rye, 2008). Only those groups of people and countries who are given the appropriate resources and support will see the advantage and realize the benefit. For e-learning the major advantage is the ability to increase knowledge and skills. It is important that the experience, potential learners have with ICT, be a positive one, which will create ongoing interest in the use of technology (Rye, 2008).

To address this digital divide obstacle scholars encourage disadvantaged learners to participate in e-learning environments geared towards non-traditional students with activities that will help influence a set of skills that build competence and self-confidence in the use of the technology (van Deursen, 2011; Whelan, 2008). It is also important that instructors of e-learning environments develop appropriately interactive activities that will foster comprehension, resolve misconceptions, and encourage interaction between participants (Rye, 2008), which will help support and encourage intrinsic learner motivation.

### **Administrative Issues**

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**Comment [12]:** Colloquial.

The fifth and final factor having an impact on the digital divide is a direct result from a combination of issues such as lack of instructor skills, timely feedback, and clear e-learning instructions and deadlines (Lee, 2011). This factor contributes to the digital divide because the most technology versed instructors teach in environments with an abundance of technology resources, while the least trained instructors often teach the less advantaged with the least amount of technology accessibility (Rye 2008; van Deursen, 2011; Whelan, 2008). It is imperative that all instructors of e-learning environments engage with their learners and encourage the necessary technology skills discussed throughout this paper. “Innovative instructional design is . . . the key force of change and improvement in teaching and learning” (Whalen, 2008, p. 67).

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Comment [14]: Avoid hyperbole.

### Conclusion

The obstacles to e-learning success are many and varied and contribute to a constant gap between two notions of the digital divide, those who have access to technology and those who do not. This paper identified five obstacles contributing to the digital divide, discussed their impact to the e-learning environment, and gave solutions in addressing and closing the gaps resulting from the referenced literature.

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